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TELEPHONE: (510) 643-8678
TELEFAX: (510) 643-8919
E-MAIL: bea@ce.berkeley.edu
HTTP://www.ce.berkeley.edu/

CENTER FOR CATASTROPHIC RISK MANAGEMENT
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING
212 McLAUGHLIN HALL
BERKELEY, CALIFORNIA 94720-1710

October 16, 2007

Terry Spragg
Terry G. Spragg & Associates
420 Highland Ave.
Manhattan Beach, California 90266

Dear Terry,

Thank you for sending me the DVD and documents related to your proposed waterbag ideas for developing and testing an emergency levee repair and emergency water transport system in the Delta.

I believe your ideas are valid and definitely worth testing. Only a test in actual Delta conditions will be able to validate your waterbag applications in the Delta. This should be easy and relatively inexpensive to accomplish.

During our phone conversations you referred to my comments on levee repair in the article titled, *"Air-dropped dams could fix levee breaches,"* in the August 2007 issue of **NEW SCIENTIST ENVIRONMENT**, in which I comment on the tests being done at the U.S. Department of Homeland Security on a self-filling bladder idea originally developed by the U.S. Department of Defense. You will note my comment in this article that this bladder idea could prove useful, *"assuming the bladders can be kept securely in place."*

The concept that you and my U.C. Berkeley colleague, Ray Seed, have proposed, which involves placing large diameter (30 to 50 feet) water filled bladders in a levee breach perpendicular to the breach so that your towing bridle secures the bladder at both ends of the bladder on each side of the breach, could solve the problem of keeping the bladders securely in place, both during filling and after they are filled.

Your waterbag/bladder technology concept could offer four important advantages to solving the levee repair problem:

(1) Waterbags should be easy to secure in place using your patented zipper towing connection bridle at each end of the waterbag on each side of the breach.
(2) Waterbags should be easy to fill with water once it is secured in place at both ends.
(3) Waterbags should be easy to remove once a permanent levee repair structure is in place. Air will be forced into the secured waterbags that are filled with water, thus evacuating the water from the waterbags, and then removing the waterbags from the repaired levee breach
(4) Waterbags should be an easy and relatively inexpensive theory to test.

I make these comments based on my experience in investigating the failures of the flood defense systems in New Orleans after the Katrina disaster, and in my capacity at the Civil & Environmental Engineering School at U.C. Berkeley (since 1988) as co-Director of the Marine Technology and Management Group and as the co-Director at the Center for Risk Mitigation.

I hope that the Metropolitan Water District and/or the Department of Water Resources will consider testing the various waterbag emergency applications for the Delta you have proposed. I have read your *"What if?"* presentation that you plan to submit to the MWD Water Planning Committee. Your comments seem to confirm that you have presented several valid arguments for a test of your waterbag technology related to its many applications for California.

I would be happy to discuss your waterbag emergency ideas for the Delta and how a test of these ideas could be implemented with MWD/DWR officials. I can be reached by email at, Bea@ce.Berkeley.edu, or by phone at (510) 642-0967.

I wish you the best of success for your endeavors.

Best regards,

Bob Bea